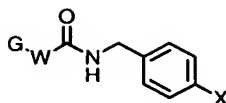


## WHAT IS CLAIMED IS:

1. A compound of formula I,



(I)

wherein,

X is Cl, Br, F, CN or NO<sub>2</sub>;

G is (a) C<sub>1-7</sub>alkyl which partially unsaturated and is substituted by hydroxy, or

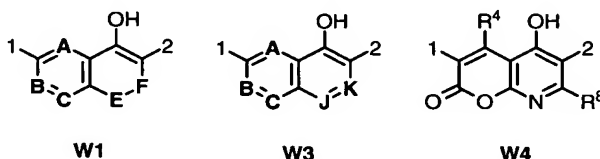
(b) C<sub>1-4</sub>alkyl substituted by NR<sup>1</sup>R<sup>2</sup> or 4-tetrahydropyran;

R<sup>1</sup> is C<sub>2-7</sub>alkyl substituted by hydroxy, C<sub>1-4</sub>alkoxy, aryl, or heteroaryl;

R<sup>2</sup> is hydrogen or C<sub>1-7</sub>alkyl;

or R<sup>1</sup> and R<sup>2</sup> together with the nitrogen to which they are attached form morpholine which may be optionally substituted by aryl or C<sub>1-7</sub>alkyl;

W is a heterocycle of formula W1, W3, or W4;



A is CR<sup>4</sup> or nitrogen;

B is CR<sup>5</sup> or nitrogen;

C is CR<sup>6</sup> or nitrogen;

E and F are such that (a) one is oxygen and the other is C(=O); or

(b) E is C(=O) and F is NR<sup>7</sup>;

J and K are such that

(a) J is nitrogen and K is CR<sup>8</sup>; or

(b) J is CR<sup>6</sup> and K is nitrogen;

with the provisos that when W is of formula W3 and J is nitrogen, then at least one of A and B is nitrogen;

R<sup>4</sup> is H, halogen, or C<sub>1-4</sub>alkyl optionally substituted by one to three halogens;

R<sup>5</sup> is (a) H,

- (b) halo,
- (c)  $\text{OR}^{12}$ ,
- (d)  $\text{SR}^{12}$ ,
- 5 (e)  $\text{C}_{1-7}$ alkyl which may be partially unsaturated and optionally substituted by one or more substituents selected from  $\text{OR}^{12}$ ,  $\text{SR}^{12}$ ,  $\text{NR}^{10}\text{R}^{11}$ , or halo,
- (f)  $\text{C}_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen,  $\text{OR}^{12}$ ,  $\text{SR}^{12}$ , or  $\text{NR}^{10}\text{R}^{11}$ ,
- (g)  $(\text{C}=\text{O})\text{R}^9$ ,
- 10 (h)  $\text{S}(\text{O})_m\text{R}^9$ ,
- (i)  $(\text{C}=\text{O})\text{OR}^2$ ,
- (j)  $\text{NHSO}_2\text{R}^9$ ,
- (k) nitro, or
- (l) cyano;
- 15  $\text{R}^6$  is (a) H,
- (b) halo,
- (c) aryl,
- (d) het,
- (e)  $\text{OR}^{12}$ ,
- 20 (f)  $\text{SR}^{12}$ ,
- (g)  $\text{C}_{1-7}$ alkyl which may be partially unsaturated and optionally substituted by one or more substituents selected from  $\text{OR}^{12}$ ,  $\text{SR}^{12}$ ,  $\text{NR}^{10}\text{R}^{11}$ , aryl, halo,  $\text{C}_{3-8}$ cycloalkyl optionally substituted by  $\text{OR}^{12}$ , or het attached through a carbon atom,
- 25 (h)  $\text{NR}^{10}\text{R}^{11}$ ,
- (i)  $\text{C}_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen,  $\text{OR}^{12}$ ,  $\text{SR}^{12}$ , or  $\text{NR}^{10}\text{R}^{11}$ ,
- (j)  $(\text{C}=\text{O})\text{R}^9$ ,
- 30 (k)  $\text{S}(\text{O})_m\text{R}^9$ ,
- (l)  $(\text{C}=\text{O})\text{OR}^2$ ,
- (m)  $\text{NHSO}_2\text{R}^9$ ,
- (n) nitro, or

- (o) cyano;
- $R^7$  is (a) H,
- (b)  $C_{1-7}$ alkyl which may be partially unsaturated and optionally substituted by one or more substituents selected from  $OR^{12}$ ,  $SR^{12}$ ,  $NR^{10}R^{11}$ , or halo,
- 5 (c)  $C_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen,  $OR^{12}$ ,  $SR^{12}$ , or  $NR^{10}R^{11}$ ,
- (d) aryl, or
- (e) het;
- 10  $R^8$  is (a) H,
- (b)  $C_{1-7}$ alkyl which may be partially unsaturated and optionally substituted by one or more substituents selected from  $OR^{12}$ ,  $SR^{12}$ ,  $NR^{10}R^{11}$ , or halo,
- (c)  $OR^{12}$ , or
- (d)  $SR^{12}$ ;
- 15  $R^9$  is (a)  $C_{1-7}$ alkyl,
- (b)  $NR^{10}R^{11}$ ,
- (c) aryl, or
- (d) het, wherein said het is bound through a carbon atom;
- $R^{10}$  and  $R^{11}$  are independently
- 20 (a) H,
- (b) aryl,
- (c)  $C_{1-7}$ alkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from  $CONR^2R^2$ ,  $CO_2R^2$ , het, aryl, cyano, or halo,
- 25 (d)  $C_{2-7}$ alkyl which may be partially unsaturated and is substituted by one or more substituents selected from  $NR^2R^2$ ,  $OR^2$ , or  $SR^2$ ,
- (e)  $C_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen,  $OR^2$ ,  $SR^2$ , or  $NR^2R^2$ , or
- 30 (f)  $R^{10}$  and  $R^{11}$  together with the nitrogen to which they are attached form a het;
- $R^{12}$  is (a) H,
- (b) aryl,

- (c) het
- (d) C<sub>1-7</sub>alkyl optionally substituted by aryl, het, or halogen,
- (e) C<sub>2-7</sub>alkyl substituted by OR<sup>2</sup>, SR<sup>2</sup>, or NR<sup>2</sup>R<sup>2</sup>, or
- (f) C<sub>3-8</sub>cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen, OR<sup>2</sup>, SR<sup>2</sup>, or NR<sup>2</sup>R<sup>2</sup>;

each m is independently 1 or 2;

- 10 aryl is a phenyl radical or an ortho-fused bicyclic carbocyclic radical wherein at least one ring is aromatic, and aryl may be optionally substituted with one or more substituents selected from halo, OH, cyano, NR<sup>2</sup>R<sup>2</sup>, CO<sub>2</sub>R<sup>2</sup>, CF<sub>3</sub>, C<sub>1-6</sub>alkoxy, and C<sub>1-6</sub> alkyl which may be further substituted by one to three SR<sup>2</sup>, NR<sup>2</sup>R<sup>2</sup>, OR<sup>2</sup>, or CO<sub>2</sub>R<sup>2</sup> groups;

- 15 het is a four- (4), five- (5), six- (6), or seven- (7) membered saturated or unsaturated heterocyclic ring having 1, 2, or 3 heteroatoms selected from oxygen, sulfur, or nitrogen, which is optionally fused to a benzene ring, or any bicyclic heterocycle group, and het may be optionally substituted with one or more substituents selected from halo, OH, cyano, phenyl, CO<sub>2</sub>R<sup>2</sup>, CF<sub>3</sub>, C<sub>1-6</sub>alkoxy, oxo, oxime, and C<sub>1-6</sub> alkyl which may be further substituted by one to three SR<sup>2</sup>, NR<sup>2</sup>R<sup>2</sup>, OR<sup>2</sup>, or CO<sub>2</sub>R<sup>2</sup> groups;

halo or halogen is F, Cl, Br, I;

- 25 1 represents the point of attachment between W and G;

2 represents the point of attachment between W and the carbonyl group of Formula (I);

- 30 and a pharmaceutically acceptable salt thereof;

2. A compound of claim 1 wherein W is of the formula W1.

3. A compound of claim 2 wherein W is of the formula W1.1.
4. A compound of claim 2 wherein W is of the formula W1.2.
- 5 5. A compound of claim 2 wherein W is of the formula W1.3.
6. A compound of claim 2 wherein W is of the formula W1.4.
7. A compound of claim 2 wherein W is of the formula W1.5.
- 10 8. A compound of claim 2 wherein W is of the formula W1.6.
9. A compound of claim 2 wherein W is of the formula W1.7.
- 15 10. A compound of claim 2 wherein W is of the formula W1.8.
11. A compound of claim 2 wherein W is of the formula W1.9.
12. A compound of claim 2 wherein W is of the formula W1.10.
- 20 13. A compound of claim 2 wherein W is of the formula W1.11.
14. A compound of claim 2 wherein W is of the formula W1.12.
- 25 15. A compound of claim 2 wherein W is of the formula W1.13.
16. A compound of claim 2 wherein W is of the formula W1.14.
17. A compound of claim 2 wherein W is of the formula W1.15.
- 30 18. A compound of claim 2 wherein W is of the formula W1.16.
19. A compound of claim 2 wherein W is of the formula W1.17.

20. A compound of claim 2 wherein W is of the formula W1.18.
21. A compound of claim 2 wherein W is of the formula W1.19.
- 5 22. A compound of claim 2 wherein W is of the formula W1.20.
23. A compound of claim 2 wherein W is of the formula W1.21.
- 10 24. A compound of claim 2 wherein W is of the formula W1.22.
25. A compound of claim 2 wherein W is of the formula W1.23.
26. A compound of claim 1 wherein W is of the formula W3.
- 15 27. A compound of claim 26 wherein W is of the formula W3.1.
28. A compound of claim 26 wherein W is of the formula W3.2.
- 20 29. A compound of claim 26 wherein W is of the formula W3.3.
30. A compound of claim 26 wherein W is of the formula W3.4.
31. A compound of claim 26 wherein W is of the formula W3.5.
- 25 32. A compound of claim 26 wherein W is of the formula W3.6.
33. A compound of claim 26 wherein W is of the formula W3.7.
- 30 34. A compound of claim 26 wherein W is of the formula W3.8.
35. A compound of claim 26 wherein W is of the formula W3.9.

36. A compound of claim 26 wherein W is of the formula W3.10.
37. A compound of claim 26 wherein W is of the formula W3.11.
- 5 38. A compound of claim 26 wherein W is of the formula W3.12.
39. A compound of claim 26 wherein W is of the formula W3.13.
40. A compound of claim 26 wherein W is of the formula W3.14.
- 10 41. A compound of claim 1 wherein W is of the formula W4.
42. The compound according to claim 1, wherein X is Cl.
- 15 43. The compound according to claim 1 wherein G is 4-morpholinylmethyl.
44. The compound according to claim 1 wherein G is 3-hydroxy-1-propynyl.
45. The compound according to claim 1 wherein G is tetrahydro-2*H*-pyran-4-ylmethyl.
- 20
46. The compound according to claim 1 which is  
*N*-(4-chlorobenzyl)-4-hydroxy-6-(4-morpholinylmethyl)-2-oxo-2*H*-pyrano[2,3-*c*]pyridine-3-carboxamide;
- 25  
*N*-(4-chlorobenzyl)-4-hydroxy-6-(3-hydroxy-1-propynyl)-1-oxo-1*H*-isochromene-3-carboxamide;
- N*-(4-chlorobenzyl)-4-hydroxy-1-oxo-6-(tetrahydro-2*H*-pyran-4-ylmethyl)-1*H*-
- 30 isochromene-3-carboxamide;
- N*-(4-chlorobenzyl)-4-hydroxy-6-(4-morpholinylmethyl)-1-oxo-1*H*-isochromene-3-carboxamide;

*N*-(4-chlorobenzyl)-5-hydroxy-3-(3-hydroxy-1-propynyl)-8-oxo-7,8-dihydro[1,7]-naphthyridine-6-carboxamide;

- 5 *N*-(4-chlorobenzyl)-4-hydroxy-6-(3-hydroxy-1-propynyl)-1-oxo-1,2-dihydro-3-isoquinolinecarboxamide;

*N*-(4-chlorobenzyl)-4-hydroxy-6-(4-morpholinylmethyl)-1-oxo-1,2-dihydro-3-isoquinolinecarboxamide;

10

*N*-(4-chlorobenzyl)-4-hydroxy-6-(3-hydroxy-1-propynyl)[1,7]naphthyridine-3-carboxamide;

*N*-(4-chlorobenzyl)-8-ethoxy-4-hydroxy-6-(3-hydroxy-1-propynyl)[1,7]-

- 15 naphthyridine-3-carboxamide;

*N*-(4-chlorobenzyl)-4-hydroxy-6-(4-morpholinylmethyl)[1,7]naphthyridine-3-carboxamide;

- 20 *N*-(4-chlorobenzyl)-8-ethoxy-4-hydroxy-6-(4-morpholinylmethyl)[1,7]naphthyridine-3-carboxamide;

*N*-(4-chlorobenzyl)-4-hydroxy-6-(3-hydroxy-1-propynyl)[1,5]naphthyridine-3-carboxamide;

25

*N*-(4-chlorobenzyl)-4-hydroxy-6-(4-morpholinylmethyl)[1,5]naphthyridine-3-carboxamide;

*N*-(4-chlorobenzyl)-4-hydroxy-6-(tetrahydro-2*H*-pyran-4-ylmethyl)[1,5]-

- 30 naphthyridine-3-carboxamide;

*N*-(4-chlorobenzyl)-8-hydroxy-2-(3-hydroxy-1-propynyl)pyrido[3,2-*d*]pyrimidine-7-carboxamide;



*N*-(4-chlorobenzyl)-8-hydroxy-2-(4-morpholinylmethyl)pyrido[3,2-*d*]pyrimidine-7-carboxamide;

- 5    *N*-(4-chlorobenzyl)-5-hydroxy-3-(4-morpholinylmethyl)[1,7]naphthyridine-6-carboxamide;

*N*-(4-chlorobenzyl)-5-hydroxy-3-(3-hydroxy-1-propynyl)[1,7]naphthyridine-6-carboxamide;

10

*N*-(4-chlorobenzyl)-5-hydroxy-3-(tetrahydro-2*H*-pyran-4-ylmethyl)[1,7]-naphthyridine-6-carboxamide;

*N*-(4-chlorobenzyl)-4-hydroxy-6-(4-morpholinylmethyl)-3-isoquinolinecarboxamide;

15

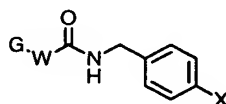
*N*-(4-chlorobenzyl)-4-hydroxy-6-(3-hydroxy-1-propynyl)-3-isoquinolinecarboxamide;

*N*-(4-chlorobenzyl)-4-hydroxy-6-(tetrahydro-2*H*-pyran-4-ylmethyl)-3-isoquinoline-carboxamide; or

- 20    a pharmaceutically acceptable salt thereof.

47.    A pharmaceutical composition comprising a compound of claim 1 and a pharmaceutically acceptable carrier.

- 25    48. A method of treating or preventing a viral infection, comprising administering to a mammal in need of such treatment, a compound of formula (I),



30

(I)

wherein,

X is Cl, Br, F, CN or NO<sub>2</sub>;

G is    (a)    C<sub>3-7</sub>alkyl which is partially unsaturated and is substituted by hydroxy,

(b)  $C_{1-7}$ alkyl which is fully saturated and is substituted by hydroxy, or

(c)  $C_{1-4}$ alkyl substituted by  $NR^1R^2$  or 4-tetrahydropyran;

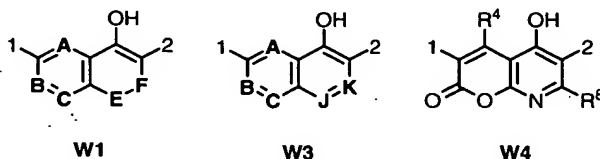
$R^1$  is  $C_{2-7}$ alkyl substituted by hydroxy,  $C_{1-4}$ alkoxy, aryl, or heteroaryl;

$R^2$  is hydrogen or  $C_{1-7}$ alkyl;

- 5 or  $R^1$  and  $R^2$  together with the nitrogen to which they are attached form morpholine which may be optionally substituted by aryl or  $C_{1-7}$ alkyl;

W is a heterocycle of formula W1, W3, or W4;

10



A is  $CR^4$  or nitrogen;

15 B is  $CR^5$  or nitrogen;

C is  $CR^6$  or nitrogen;

E and F are such that

(a) one is oxygen and the other is  $C(=O)$ ; or

(b) E is  $C(=O)$  and F is  $NR^7$ ;

J and K are such that

(a) J is nitrogen and K is  $CR^8$ ; or

20

(b) J is  $CR^6$  and K is nitrogen;

with the provisos that when W is of formula W3 and J is nitrogen, then at least one of A and B is nitrogen;

$R^4$  is H, halogen, or  $C_{1-4}$ alkyl optionally substituted by one to three halogens;

25  $R^5$  is (a) H,

(b) halo,

(c)  $OR^{12}$ ,

(d)  $SR^{12}$ ,

(e)  $C_{1-7}$ alkyl which may be partially unsaturated and optionally substituted by one or more substituents selected from  $OR^{12}$ ,  $SR^{12}$ ,  $NR^{10}R^{11}$ , or halo,

30

(f)  $C_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen,  $OR^{12}$ ,  $SR^{12}$ , or  $NR^{10}R^{11}$ ,

- (g)  $(\text{C}=\text{O})\text{R}^9$ ,  
 (h)  $\text{S}(\text{O})_m\text{R}^9$ ,  
 (i)  $(\text{C}=\text{O})\text{OR}^2$ ,  
 (j)  $\text{NHSO}_2\text{R}^9$ ,  
 5 (k) nitro, or  
 (l) cyano;
- $\text{R}^6$  is (a) H,  
 (b) halo,  
 (c) aryl,  
 10 (d) het,  
 (e)  $\text{OR}^{12}$ ,  
 (f)  $\text{SR}^{12}$ ,  
 (g)  $\text{C}_{1-7}$ alkyl which may be partially unsaturated and optionally substituted  
 by one or more substituents selected from  $\text{OR}^{12}$ ,  $\text{SR}^{12}$ ,  $\text{NR}^{10}\text{R}^{11}$ , aryl,  
 15 halo,  $\text{C}_{3-8}$ cycloalkyl optionally substituted by  $\text{OR}^{12}$ , or het attached  
 through a carbon atom,  
 (h)  $\text{NR}^{10}\text{R}^{11}$ ,  
 (i)  $\text{C}_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally  
 substituted by one or more substituents selected from halogen,  $\text{OR}^{12}$ ,  
 20  $\text{SR}^{12}$ , or  $\text{NR}^{10}\text{R}^{11}$ ,  
 (j)  $(\text{C}=\text{O})\text{R}^9$ ,  
 (k)  $\text{S}(\text{O})_m\text{R}^9$ ,  
 (l)  $(\text{C}=\text{O})\text{OR}^2$ ,  
 (m)  $\text{NHSO}_2\text{R}^9$ ,  
 25 (n) nitro, or  
 (o) cyano;
- $\text{R}^7$  is (a) H,  
 (b)  $\text{C}_{1-7}$ alkyl which may be partially unsaturated and optionally substituted  
 by one or more substituents selected from  $\text{OR}^{12}$ ,  $\text{SR}^{12}$ ,  $\text{NR}^{10}\text{R}^{11}$ , or halo,  
 30 (c)  $\text{C}_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally  
 substituted by one or more substituents selected from halogen,  $\text{OR}^{12}$ ,  
 $\text{SR}^{12}$ , or  $\text{NR}^{10}\text{R}^{11}$ ,  
 (d) aryl, or

- (e) het;
- $R^8$  is (a) H,
- (b)  $C_{1-7}$ alkyl which may be partially unsaturated and optionally substituted by one or more substituents selected from  $OR^{12}$ ,  $SR^{12}$ ,  $NR^{10}R^{11}$ , or halo,
- 5 (c)  $OR^{12}$ , or
- (d)  $SR^{12}$ ;
- $R^9$  is (a)  $C_{1-7}$ alkyl,
- (b)  $NR^{10}R^{11}$ ,
- (c) aryl, or
- 10 (d) het, wherein said het is bound through a carbon atom;
- $R^{10}$  and  $R^{11}$  are independently
- (a) H,
- (b) aryl,
- (c)  $C_{1-7}$ alkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from  $CONR^2R^2$ ,  $CO_2R^2$ , het, aryl, cyano, or halo,
- 15 (d)  $C_{2-7}$ alkyl which may be partially unsaturated and is substituted by one or more substituents selected from  $NR^2R^2$ ,  $OR^2$ , or  $SR^2$ ,
- (e)  $C_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen,  $OR^2$ ,  $SR^2$ , or  $NR^2R^2$ , or
- 20 (f)  $R^{10}$  and  $R^{11}$  together with the nitrogen to which they are attached form a het;
- $R^{12}$  is (a) H,
- 25 (b) aryl,
- (c) het
- (d)  $C_{1-7}$ alkyl optionally substituted by aryl, het, or halogen,
- (e)  $C_{2-7}$ alkyl substituted by  $OR^2$ ,  $SR^2$ , or  $NR^2R^2$ , or
- (f)  $C_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen,  $OR^2$ ,  $SR^2$ , or  $NR^2R^2$ ;
- 30

each m is independently 1 or 2;

aryl is a phenyl radical or an ortho-fused bicyclic carbocyclic radical wherein at least one ring is aromatic, and aryl maybe optionally substituted with one or more substituents selected from halo, OH, cyano,  $\text{NR}^2\text{R}^2$ ,  $\text{CO}_2\text{R}^2$ ,  $\text{CF}_3$ ,  $\text{C}_{1-6}$ alkoxy, and  $\text{C}_{1-6}$  alkyl which maybe further substituted by one to three  $\text{SR}^2$ ,  $\text{NR}^2\text{R}^2$ ,  $\text{OR}^2$ , or  $\text{CO}_2\text{R}^2$  groups;

het is a four- (4), five- (5), six- (6), or seven- (7) membered saturated or unsaturated heterocyclic ring having 1, 2, or 3 heteroatoms selected from oxygen, sulfur, or nitrogen, which is optionally fused to a benzene ring, or any bicyclic heterocycle group, and het may be optionally substituted with one or more substituents selected from halo, OH, cyano, phenyl,  $\text{CO}_2\text{R}^2$ ,  $\text{CF}_3$ ,  $\text{C}_{1-6}$ alkoxy, oxo, oxime, and  $\text{C}_{1-6}$  alkyl which may be further substituted by one to three  $\text{SR}^2$ ,  $\text{NR}^2\text{R}^2$ ,  $\text{OR}^2$ , or  $\text{CO}_2\text{R}^2$  groups;

halo or halogen is F, Cl, Br, I;

1 represents the point of attachment between W and G;

2 represents the point of attachment between W and the carbonyl group of Formula (I);

and a pharmaceutically acceptable salt thereof;

49. The method according to claim 48 wherein said viral infection is a herpes virus infection.

50. The method according to claim 48 wherein said mammal is a human.

51. The method according to claim 48 wherein said mammal is a food animal or companion animal.

52. The method according to claim 48 wherein the infection is herpes simplex virus type 1 or 2, human herpes virus type, 6, 7, or 8, varicella zoster virus, human cytomegalovirus, or Epstein-Barr virus.

5 53. The method according to claim 48 wherein the infection is herpes simplex virus type 1 or 2, human herpes virus type 8, varicella zoster virus, human cytomegalovirus, or Epstein-Barr virus.

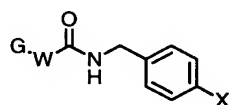
54. The method according to claim 48 wherein the amount administered is from  
10 about 0.1 to about 300 mg/kg of body weight.

55. The method according to claim 48 wherein the amount administered is from about 1 to about 30 mg/kg of body weight.

15 56. The method according to claim 48 wherein the compound is administered parenterally, topically, intravaginally, orally, or rectally.

57. A method for inhibiting a viral DNA polymerase, comprising contacting the polymerase with an effective inhibitory amount of a compound of the formula (I)

20



(I)

wherein,

25 X is Cl, Br, F, CN or NO<sub>2</sub>;

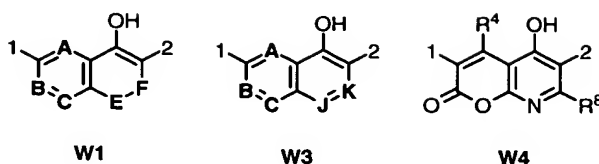
G is (a) C<sub>3-7</sub>alkyl which is partially unsaturated and is substituted by hydroxy,  
(b) C<sub>1-7</sub>alkyl which is fully saturated and is substituted by hydroxy, or  
(c) C<sub>1-4</sub>alkyl substituted by NR<sup>1</sup>R<sup>2</sup> or 4-tetrahydropyran;

R<sup>1</sup> is C<sub>2-7</sub>alkyl substituted by hydroxy, C<sub>1-4</sub>alkoxy, aryl, or heteroaryl;

30 R<sup>2</sup> is hydrogen or C<sub>1-7</sub>alkyl;

or R<sup>1</sup> and R<sup>2</sup> together with the nitrogen to which they are attached form morpholine which may be optionally substituted by aryl or C<sub>1-7</sub>alkyl;

W is a heterocycle of formula W1, W3, or W4;



5

A is CR<sup>4</sup> or nitrogen;

B is CR<sup>5</sup> or nitrogen;

C is CR<sup>6</sup> or nitrogen;

- 10 E and F are such that
- (a) one is oxygen and the other is C(=O); or
  - (b) E is C(=O) and F is NR<sup>7</sup>;

- J and K are such that
- (a) J is nitrogen and K is CR<sup>8</sup>; or
  - (b) J is CR<sup>6</sup> and K is nitrogen;

- 15 with the provisos that when W is of formula W3 and J is nitrogen, then at least one of A and B is nitrogen;

R<sup>4</sup> is H, halogen, or C<sub>1-4</sub>alkyl optionally substituted by one to three halogens;

R<sup>5</sup> is (a) H,

(b) halo,

20 (c) OR<sup>12</sup>,

(d) SR<sup>12</sup>,

(e) C<sub>1-7</sub>alkyl which may be partially unsaturated and optionally substituted by one or more substituents selected from OR<sup>12</sup>, SR<sup>12</sup>, NR<sup>10</sup>R<sup>11</sup>, or halo,

25 (f) C<sub>3-8</sub>cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen, OR<sup>12</sup>, SR<sup>12</sup>, or NR<sup>10</sup>R<sup>11</sup>,

(g) (C=O)R<sup>9</sup>,

(h) S(O)<sub>m</sub>R<sup>9</sup>,

(i) (C=O)OR<sup>2</sup>,

30 (j) NHSO<sub>2</sub>R<sup>9</sup>,

(k) nitro, or

(l) cyano;

R<sup>6</sup> is (a) H,

- (b) halo,
- (c) aryl,
- (d) het,
- (e)  $OR^{12}$ ,
- 5 (f)  $SR^{12}$ ,
- (g)  $C_{1-7}$ alkyl which may be partially unsaturated and optionally substituted by one or more substituents selected from  $OR^{12}$ ,  $SR^{12}$ ,  $NR^{10}R^{11}$ , aryl, halo,  $C_{3-8}$ cycloalkyl optionally substituted by  $OR^{12}$ , or het attached through a carbon atom,
- 10 (h)  $NR^{10}R^{11}$ ,
- (i)  $C_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen,  $OR^{12}$ ,  $SR^{12}$ , or  $NR^{10}R^{11}$ ,
- (j)  $(C=O)R^9$ ,
- 15 (k)  $S(O)_mR^9$ ,
- (l)  $(C=O)OR^2$ ,
- (m)  $NHSO_2R^9$ ,
- (n) nitro, or
- (o) cyano;
- 20  $R^7$  is (a) H,
- (b)  $C_{1-7}$ alkyl which may be partially unsaturated and optionally substituted by one or more substituents selected from  $OR^{12}$ ,  $SR^{12}$ ,  $NR^{10}R^{11}$ , or halo,
- (c)  $C_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen,  $OR^{12}$ ,
- 25  $SR^{12}$ , or  $NR^{10}R^{11}$ ,
- (d) aryl, or
- (e) het;
- $R^8$  is (a) H,
- (b)  $C_{1-7}$ alkyl which may be partially unsaturated and optionally substituted by one or more substituents selected from  $OR^{12}$ ,  $SR^{12}$ ,  $NR^{10}R^{11}$ , or halo,
- 30 (c)  $OR^{12}$ , or
- (d)  $SR^{12}$ ;
- $R^9$  is (a)  $C_{1-7}$ alkyl,



- (b)  $\text{NR}^{10}\text{R}^{11}$ ,
- (c) aryl, or
- (d) het, wherein said het is bound through a carbon atom;

$\text{R}^{10}$  and  $\text{R}^{11}$  are independently

- 5 (a) H,
- (b) aryl,
- (c)  $\text{C}_{1-7}$ alkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from  $\text{CONR}^2\text{R}^2$ ,  $\text{CO}_2\text{R}^2$ , het, aryl, cyano, or halo,
- 10 (d)  $\text{C}_{2-7}$ alkyl which may be partially unsaturated and is substituted by one or more substituents selected from  $\text{NR}^2\text{R}^2$ ,  $\text{OR}^2$ , or  $\text{SR}^2$ ;
- (e)  $\text{C}_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen,  $\text{OR}^2$ ,  $\text{SR}^2$ , or  $\text{NR}^2\text{R}^2$ , or
- 15 (f)  $\text{R}^{10}$  and  $\text{R}^{11}$  together with the nitrogen to which they are attached form a het;

$\text{R}^{12}$  is

- (a) H,
- (b) aryl,
- (c) het
- 20 (d)  $\text{C}_{1-7}$ alkyl optionally substituted by aryl, het, or halogen,
- (e)  $\text{C}_{2-7}$ alkyl substituted by  $\text{OR}^2$ ,  $\text{SR}^2$ , or  $\text{NR}^2\text{R}^2$ , or
- (f)  $\text{C}_{3-8}$ cycloalkyl which may be partially unsaturated and is optionally substituted by one or more substituents selected from halogen,  $\text{OR}^2$ ,  $\text{SR}^2$ , or  $\text{NR}^2\text{R}^2$ ;

25

each m is independently 1 or 2;

aryl is a phenyl radical or an ortho-fused bicyclic carbocyclic radical wherein at least one ring is aromatic, and aryl maybe optionally substituted with one or more  
 30 substituents selected from halo, OH, cyano,  $\text{NR}^2\text{R}^2$ ,  $\text{CO}_2\text{R}^2$ ,  $\text{CF}_3$ ,  $\text{C}_{1-6}$ alkoxy, and  $\text{C}_{1-6}$ alkyl which maybe further substituted by one to three  $\text{SR}^2$ ,  $\text{NR}^2\text{R}^2$ ,  $\text{OR}^2$ , or  $\text{CO}_2\text{R}^2$  groups;

het is a four- (4), five- (5), six- (6), or seven- (7) membered saturated or unsaturated heterocyclic ring having 1, 2, or 3 heteroatoms selected from oxygen, sulfur, or nitrogen, which is optionally fused to a benzene ring, or any bicyclic heterocycle group, and het may be optionally substituted with one or more substituents selected  
 5 from halo, OH, cyano, phenyl, CO<sub>2</sub>R<sup>2</sup>, CF<sub>3</sub>, C<sub>1-6</sub>alkoxy, oxo, oxime, and C<sub>1-6</sub> alkyl which may be further substituted by one to three SR<sup>2</sup>, NR<sup>2</sup>R<sup>2</sup>, OR<sup>2</sup>, or CO<sub>2</sub>R<sup>2</sup> groups;

halo or halogen is F, Cl, Br, I;

10 1 represents the point of attachment between W and G;

2 represents the point of attachment between W and the carbonyl group of Formula (I);

15 and a pharmaceutically acceptable salt thereof;

58. The method of claim 57 wherein the polymerase and the compound are contacted *in vitro*.

20 59. The method of claim 57 wherein the polymerase and the compound are contacted *in vivo*.